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SUMMARY OF MEETING NOTES FOR SANTA SUSANA FIELD LABORATORY RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) FACILITY INVESTIGATION REPORTING (RFI), MARCH 8, 2006

Dear Mr. Lennox:

On March 8, 2006, the Department of Toxic Substances Control (DTSC) met with Boeing to discuss issues related to preparation of RFI bundled reports. Since Boeing is currently preparing the first of a series of nine bundled RFI reports, both Boeing and DTSC met to discuss the general objectives, approach, and contents of these RFI reports. Although it is too early in the reporting process to describe the detailed format and specific elements of a bundled RFI report, it was agreed that this is an opportune time for DTSC to discuss issues that would aid in expediting agency review. Boeing in turn provided feedback regarding DTSC's suggestions. In some cases agreements were made to incorporate specific requests, in other cases, Boeing indicated that they would take into consideration DTSC's requests as the reports are being generated. Boeing also provided an overview of the reporting process and explained the efficiencies and limitations involved with generating each bundled report.

This letter is a summary of key RFI reporting issues discussed during the March 8, 2006 meeting with Boeing.

Purpose of the bundled reports: Boeing indicated that the scope and purpose is:

- To describe Surficial Media Operable Unit (SMOU) and Chatsworth Formation Operable Unit (CFOU) characterization findings for the reporting areas showing that surficial media characterization is complete;

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- To describe potential risks to receptors for complete and potentially complete pathways; and

- To make recommendations of areas requiring further evaluation in the Corrective Measures Study (CMS) for both surficial and groundwater media.

Boeing presented a general overview regarding the above-defined purpose of the bundled reports. DTSC concurred with the general approach, and suggested the following issues be addressed regarding report format and content. DTSC also requested clarification on some site-wide reporting issues.

Overview of site-wide reporting issues:

1) **Uncertainties regarding CFOU (e.g., groundwater flow direction, contaminant migration pathways, etc.):** Boeing indicated that the bundled reports will defer these uncertainties, when present, to the site-wide groundwater report that will be submitted after the bundled reports are submitted.

2) **Characterization and risk assessment of off-site springs and wells:** Boeing indicated that to the extent practicable, they will attempt to incorporate characterization and risk assessment of off-site springs and wells in each relevant bundled report area. Some off-site springs and wells, however, will likely extend beyond bundled reporting area boundaries and will be addressed in a separate submittal at a later date.

3) **Scope of Corrective Measures Study (CMS) recommendations:** Boeing indicated that the bundled reports will include recommendations for CMS actions for surficial media. CMS recommendations for groundwater media will be developed pending completion of groundwater characterization, and will be included in the site-wide groundwater report, which will be submitted after the bundled reports are submitted.

4) **Schedule coordination for DTSC staff review:** The bundled reports will require initial review and comments from DTSC's hydrogeologist, who is responsible for CFOU technical support. DTSC requested that Boeing coordinate scheduling of the hydrogeologist's time for CFOU program activities to allow him to prioritize time for review of the RFI bundled reports as soon as they are submitted. Careful schedule coordination will be required in order to maintain the expedited bundled report review schedule. If DTSC hydrogeologist's are not available for review when the

bundled report is first submitted, then the entire DTSC review team's schedule will be delayed.

5) **Bundled report review schedule:** The scope of review should be based on attaining the defined reporting objectives. A schedule should be developed that allows sufficient time for all technical reviewers. Time should be allocated as necessary to achieve the defined level of review. Two years is not sufficient for an adequate RFI SMOU report review using currently identified DTSC staff.

6) **Range of scope of review - minimum baseline review (e.g. review only information and data that is in the report) vs. expanded scope of review (e.g. review and research data/information that is outside of the report):** Expanded review requires additional time. DTSC has limited ability and resources to go outside the reports to research historical background activities and chemical use areas and analytical data trends. The RFI bundled reports need to be stand alone documents. Boeing is responsible for providing an adequate description of the history of site activities and chemical uses and adequate graphics and tables for data review. The reviews can be expedited if all relevant information summarized in publicly available documents is summarized in the RFI reports. DTSC's Geologic Services Unit (GSU) can spot check the chronology by referring to information included in previous RFI-related documents. If sufficient detail regarding historical activities is lacking in RFI documents to date, then Boeing should include additional information to address the full history of relevant site activities for all solid waste management units (SWMU) and areas of concern (AOC). GSU will note if periods of time for activities are not accounted for, or if the description of activities is not sufficient to explain observed sources, nature, extent, and distribution of contaminants.

7) **Bundled reports:** SMOU RFI reviews are subject to re-openers until such time as the CFOU is completed. DTSC will take the bundled report reviews as far as we can with the understanding additional review will incorporate other data as it becomes available.

8) **Status of RFI workplans:** RFI Report reviews include determining if the DTSC-approved scope of work was conducted or completed in accordance with the approved Workplans. If a unit has no DTSC-approved workplan, or subsequent investigation work was expanded beyond the original approved workplan, this should be clearly identified in each report. The status of the DTSC-approved workplans for each unit should be described in the reports.

9) **Data usability issues:** Any analytical data for soils, soil vapor, or groundwater data deemed unusable for input into the RFI and exposure point concentrations (EPC) need to be clearly identified and the basis explained. Usable and unusable data need to be presented in an easily referenced manner (i.e. tables should clearly show what analytical was included and what data were considered unusable).

10) **Maps and scale of data presentation:** The scale of maps, cross-sections, etc., need to be of sufficient detail to meet RFI objectives. DTSC's ability to turn reviews around quickly will depend on the type of maps and data plots provided (currently staff 'hand plot' analytical values on maps for select constituents to evaluate spatial and vertical distributions of contaminants).

11) **Historical background:** Historical descriptions for activities at SWMUs need to provide enough relevant information so the reviews can be complete and so we know we have looked for the right chemicals. For each contaminant identified, a good explanation of its origin needs to be provided. The reviewer will check for inconsistencies and will be limited to the information and data provided (DTSC's ability to look beyond the data and historical information provided in the RFI reports are limited) so it is critical that adequate supporting information be provided to make the reviews efficient. If proprietary chemicals or materials were used in an area and historical documents are not available (or if historical activities are unknown or knowledge limited) then the reports need to be clear regarding this. Each report should clearly state what information is not known or not available.

12) **References:** RFI Reports may reference documents that DTSC does not have or is not familiar with. DTSC needs to have access to all primary and secondary references in reports. DTSC would like to have a full library of all RFI-related documents in advance of submittal of the RFI reports.

13) **Crossover pathway issues:** Not all pathways are within a bundled area. Some pathways may crossover between bundled report areas (i.e. discharge from the SRE Pond (Bundle Area 6) eventually flows into Silvernale Pond (Bundle Area 9)). The sequence of submittals may be important for this reason. There may need to be some iteration involved in the reviews.

14) **Vadose zone characterization:** The RFI Reports need to clearly discuss the extent of the vadose zone within the SMOU. Through time, water levels may rise or drop, exposing mass for vapor migration. Include a discussion on the temporal aspects of this with respect to contaminant migration pathway and risk to receptors. The reports need to clearly describe the temporal presence of water levels in the

bedrock, as well as the presence and types of contaminants in the bedrock. To address temporal issues, more than one sampling or monitoring event may be necessary to insure we have an understanding of the conditions over time. Include a discussion in the reports regarding the temporal effects on soil vapor data (for example, LOX soil vapor data issues).

15) **Shallow groundwater characterization:** The reports should clearly describe the "baseline" understanding for where shallow groundwater is found. Shallow groundwater is transient in nature and changes seasonally. The reports should evaluate the completeness of the analytical suites – have all chemicals been considered? An example – most analyses from the piezometers focused on VOCs and total metals. Also, the reports need to address the issue of data usability for data representing total metals in groundwater (piezometers) vs. dissolved metals in groundwater (CFOU data). The reports should depict the current and updated understanding of aerial extent of affected media. Conclusions in the RFI reports may be subject to uncertainties if data gaps exist for shallow groundwater (e.g., aerial extent, seasonal and temporal issues). The reports should address these uncertainties. Information from the shallow groundwater reports previously submitted should be updated and incorporated into the RFI reports. Note that DTSC has not reviewed the previous shallow groundwater report submittals, as the interpretations included in them have been evolving as more recent data is collected. The reports should use an appropriate comparison value for shallow groundwater data.

16) **First-encountered groundwater characterization:** Each bundled report should evaluate the nature and extent of contaminants for ALL media in the bundled area, including first-encountered groundwater. The reports should note the consistency between what contaminants are seen in first-encountered groundwater vs. those observed in other surficial media. For some SWMUs and AOCs, the reports may need to address the nature and extent of contaminants in first-encountered groundwater beyond the boundaries of the units (e.g., compare contaminants in Silvernale Pond with those observed from SRE pond and SRE Pond discharge pipeline).

Risk Assessment Issues:

1) **Ecological risk assessment reporting schedule:** Boeing indicated that the large home range receptor risk estimates will require evaluation of acreage larger than most individual bundled areas. For this reason, the large home range receptor risk estimates will be deferred until completion of all areas and reported last.

2) **Exposure Point Concentrations:** DTSC's Human and Ecological Risk Division (HERD) will verify that the EPC are determined correctly and appropriate for the Chemical of Potential Concern (COPC) effect/exposure duration combination. HERD indicated that the EPC should be determined using data of acceptable quality. DTSC requested that data used for determining EPC be clearly identified in tables and spreadsheets. RFI characterization data that is not used for determining EPC (presumably due to QA/QC issues) should be identified in the reports, along with a description of criteria used as a basis for removal of the data for use in risk assessment. The method for calculation of the EPC (and the calculation itself) should be clearly presented in the report. A qualitative graphical display (maps, tables, figures) of the data and input into a spreadsheet will help greatly in expediting the review.

If you have any questions, please contact me at (916) 255-3600.

Sincerely,

Signed by Gerard Abrams, 09/29/06

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